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*Weekly morbidity and mortality table, cities of the United States*—Continued.

| Cities. | Week ended— | Population, United States census, 1900. | Total deaths from all causes. | Tuberculosis. | | Enteric fever. | | Scarlet fever. | | Diphtheria. | | Measles. | | Whooping cough. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths, | Cases. | Deaths. |
| Warren, Pa | July 13 | 8,043 | 0 | 2 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| **Washington, D. C.** | July 4 | 278,718 | 136 | .... | 13 | 26 | 5 | 1 | .... | .... | .... | 20 | .... | 11 | 5 |
| Do | July 11 | 278,718 | 140 | .... | 11 | 11 | 1 | 3 | .... | 1 | .... | 18 | .... | 10 | .... |
| **Wilkesbarre, Pa** | July 10 | 51,721 | 17 | .... | .... | 6 | 1 | 1 | .... | 1 | .... | 5 | .... | .... | .... |
| **Wilkinsburg, Pa** | June 14 | 11,886 | 5 | .... | .... | 1 | .... | .... | .... | .... | .... | 17 | 1 | .... | .... |
| Do | [a]July 12 | 11,886 | 7 | 1 | 1 | .... | .... | 4 | .... | .... | .... | .... | .... | .... | .... |
| Williamsport, Pa | July 11 | 28,757 | 6 | .... | .... | .... | .... | 1 | .... | .... | .... | 1 | .... | .... | .... |
| Wilmington, Del | ....do.... | 76,508 | 32 | .... | 4 | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... |
| **Winona, Minn** | ....do.... | 19,714 | 8 | .... | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| **Woburn, Mass** | ....do.... | 14,254 | 4 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Worcester, Mass | ....do.... | 118,421 | 38 | .... | .... | 1 | .... | 2 | .... | 7 | .... | 9 | .... | .... | .... |

[a] Intervening weeks previously reported.

## *Special report.*

### PRELIMINARY NOTE OF A NEW PATHOGENIC HÆMOGREGARINE, HEPATOZOÖN PERNICIOSUM, FOUND IN WHITE RATS IN WASHINGTON, D. C.

[By Assistant Surgeon W. W. MILLER.]

In March of this year an epizoötic was observed among the stock of white rats kept for laboratory purposes. About 25 per cent of the animals died. The disease was marked by an apathetic condition and gradually increasing anemia. Death ensued from 4 days to 2 weeks after the onset of symptoms. Post-mortem examination showed the lesions to be great enlargement of the spleen and fatty degeneration of the liver. An examination of the blood showed a marked increase in the number of large mononuclear lymphocytes (in some rats as many as 110,000 per cm.). In many of the large lymphocytes were embedded oval, encapsulated parasites, measuring on an average 6 by 12 microns, somewhat resembling *Leucocytozoön canis* found in dogs in India. Multiplication in the rat was found to take place in the liver cells. The schizonts, encapsulated when mature, rupture and set free from 15 to 20 merozoites into the liver capillaries. The merozoites, at first free-moving vermicules, are taken in by the large lymphocytes and become the encapsulated parasites. They undergo no further change in the body of the rat, but continue to circulate in the blood stream.

The intermediate host was found to be a mite, *Lelaps echidninus* Berlese, which lives upon and sucks the blood of the rat. In the stomach of the mite the encapsulated parasites become free and conjugation between two vermicules takes place. A zygote is formed which becomes an oökinet, penetrates the stomach wall of the mite, and enters the body tissues. It becomes spheroidal in form and encapsulated, and increases greatly in size (to 200 or 300 microns in diameter). Buds are formed upon the surface of the spherical mass or sporont, which is loosely contained in the enveloping oöcyst. They increase in size and later break off as oval bodies (sporoblasts), become encapsulated, and divide into from 15 to 20 sporozoites. The sporocysts are identical in size and appearance with mature schizonts (cysts) in the rat's liver. The bi-polar arrangement of the sporozoites is also the same. The mature oöcyst in the mite contains from 50 to 100 or more sporocysts.

A large number of rats were experimentally infected by placing upon them mites which had been fed upon infected rats. Infection occurred in from 15 to 28 days or longer.

A large number of healthy rats were fed upon pellets of wet bread upon which infected mites, containing many ripe sporocysts, had been crushed. Twenty-four hours later the rats' blood was found to contain a few free-moving vermicules. Eight to ten days later numerous encapsulated parasites were observed, and, after varying periods of time, some of the animals succumbed to the infection. As the rats have frequently been seen to devour the mites when disturbed by their bites, it is believed that infection is naturally conveyed in this manner. Moreover, the parasites in the mite have always been found encapsulated.

The name *Hepatozoön perniciosum*, n. g., n. sp., is proposed for this new hæmogregarine, the first to be recorded for mammals in America.

A complete description of the parasite and the intermediate host, with illustrations and details of the experimental transmission, will appear as Bull. No. 46, Hyg. Lab., U. S. Pub. Health & Mar.-Hosp. Serv., Wash., now in press, under the following title: "*Hepatozoön perniciosum* (n. g., n. sp.): A hæmogregarine pathogenic for white rats; with a description of the sexual cycle in the intermediate host, a mite (*Lelaps echidninus*)."